of demand between off peak and peak are taken to be zero. Finally, note that the calculation refers to only those months identified as peak season months in the discussion of Section III. The use of short run elasticities is for illustrative purposes, to indicate the orders of magnitude obtained in such estimates.

We turn now to a more realistic indicator estimate in which some of the restrictive assumptions which make the above example simple are relaxed.

Indicators of Potential Pricing Improvement: Seasonally Spread Peak Responsibility Rates

The above calculation is an instructive guide to the source of the distortions inherent in average cost pricing of electric power, but is insufficient as a benchmark for further analysis. As we have argued in our discussion of short run marginal costs, the notion of "the peak" is complex: at almost any given time the relationship between capacity and demand is different, and in order to reduce that relationship to something upon which rate making can be based, considerable "averaging" over random elements in the relationship--especially the stochastic component of outages--is necessary. Even where the seasonal load curve of a given system exhibits a pronounced peak, the month or season of that peak cannot naively be identified with "the" peak, since the necessity of scheduling downtime for maintenance often means that there is no great surfeit of capacity during the offpeak seasons. If the point of peak pricing is to appropriately penalize those casually responsible for the incurrence of capacity costs, then even peak hour off peak season customers must be so penalized, since much nominally "free" capacity is actually in maintenance during that time, Present average price P is too high off peak and too low on peak, so that there are welfare losses. The off peak welfare losses ΔW_{OP} arise because off peak customers are being charged more than the marginal costs of serving them. The on peak losses ΔW_P arise because on peak customers are being charged less than the incremental costs of serving them, so that capacity plus operating costs higher than the value of the marginal peak KWH are incurred by the utility and imposed upon society. In terms of Table 30, Figure 3 refers to a single customer class: the appropriate off peak price P_{OP} will be something close to the lower bound for that customer class compiled in Column 3, and the appropriate peak price will be something close to the upper bound compiled in Column 7 of that table. The welfare loss triangles can be computed in terms of ε, the elasticity of the relevant demand schedule, Δ^P, the differential between correct and present average price, and p and q, initial quantities and prices. Those computations are summarized in Table 31, and the expressions for the welfare losses are entered at the heads of Columns 8 and 12 of that table.

In Column 3 of Table 31 we have entered a conservative estimate of proposed offpeak prices, namely twice marginal generation cost, and in Column 4 a similarly conservative proposed peak price, half of our Table 30 "upper bound" peak responsibility price. In Columns 8 and 12 benefits are tabulated by rate schedule, having been computed with the formula at the head of each column. Summation of those benefits gives our estimate of total benefits. The elasticities used in this calculation have been taken as short rı elasticities, and are the short run elasticities estimated by Chapman et. al. in the paper discussion in Section II. We have tacitly assumed that these elasticites are identical on peak and off peak, and that the cross price elasticities and therefore they are imposing capacity costs over and above those required to meet the demands of off peak hour, off peak season customers.

But how shall capacity costs be apportioned among seasons? There is, here as elsewhere, no unambiguous allocation, for the underlying problem--akin to the scheduling problem mentioned in connection with short run marginal costs--is a difficult one. The use of several reasonable measures of the relationship of capacity to demand during the three seasons into which we have divided the year--June through September, October through January, and February through May--gives very comparable results, and we have therefore adopted the simplest of procedures in this seasonal allocation of capacity costs, an allocation based upon the seasonal distribution of total energy sales. This means that, e.g., depreciation is apportioned among systems as if it were a pure user cost, incurred only in proportion to output. The ambiguities of the allocation of capacity costs among seasons do not, we feel, blur the basic cost differential, that between the cost of peak hour and off peak hour power during any day of any season. Finally, a word on utility practice in doing what amounts to this allocation. Many summer peak systems do have some rate seasonal differential, but we have found it impossible to get, from any one system, a clear statement of the basis for that differential. We have been told privately by the officials of several systems that the present differential is inadequate. A conjecture which seems to fit the facts is that the interseasonal differential--e.g., the difference between the heights of the residential tailblocks in peak and offpeak seasons--is often taken in a rule of thumb way as the short run marginal cost differential between the most expensive unit in the system and base load plants. The latter differential is typically of the order of 1¢.

Given our allocation of capacity costs by system, rate schedule, and season, our steps in deriving upper and lower bounds for prices can be retraced, and the results are as tabulated in Tables 32 through 36, Bands of Suggested Prices by Season there is one such table for each system in the sample. The major differential, already evident in our preliminary comparison of Table 30, holds:, average pricing substantially underprices peak period power. Also in line with what we have come to expect is the relative size of the differential among rate classes. Thus the commercial load is typically not "as underpriced" as residential and industrial loads. TWO explanations for this seem appropriate. First, the commercial load is typically right on peak--nowhere near as flat as the industrial load, and not as spread as the residential load, since the latter has the lighting component late into the evening and an early-morning component. Second, and not entirely fanciful, since it has been suggested to us by personnel at several utilities, residential customers are more numerous, more vocal, and more likely to be the source of complaints. If not having to deal with irate customers is a benefit valued by utility personnel, there should be some bias of rates in favor of residential customers and against commercial customers.

Having thus spread capacity costs "over seasons," we turn to the calculation of indicators of potential pricing improvement by rate schedule and season. Recall Figure 3. Both off peak and peak welfare gains ΔW_{OP} and ΔW_P are based upon internal cost measures, since all our cost estimates (which underlie our peak and off peak price estimates) are based upon internal cost measures. Further, correct pricing of off peak power will result in increased off peak consumption--and increased external cost--while correct pricing of peak power will result in decreased consumption and decrease

Table 32. BANDS OF SUGGESTED PRICES BY SEASON: Potomac Electric Power Company, 1972

Rate Schedule by Season (1)	Lower Bound "SRMC" $/KWH (2)	Generation $/KWH (3)	Transmission $/KWH (4)	Distribution $/KWH (5)	Upper Bound (6)=(2)+(3)+(4)+(5) "LRMC" $/KWH (6)	Present Av. Annual Price $/KWH (7)
Residential:						
June-Sept.	.007	.0171	.0125	.0493	.0796	
Oct.-January	.007	.0205	.0122	.0479	.0813	.02476
Feb.-May	.007	.0194	.0110	.0433	.0744	
Commercial:						
June-Sept.	.007	.0171	.0008	.0030	.0216	
Oct.-January	.007	.0205	.0008	.0030	.0250	.02185
Feb.-May	.007	.0194	.0007	.0027	.0235	
Industrial:						
June-Sept.	.007	.0171	--	--	.0178	
Oct.-January	.007	.0205	--	--	.0212	.01425
Feb.-May	.007	.0194	--	--	.0201	
Interchange & Resale:						
June-Sept.	.007	.0171	.0137	--	.0315	
Oct.-January	.007	.0205	.0137	--	.0349	.00971
Feb.-May	.007	.0194	.0137	--	.0338	

SRMC = Short-Run Marginal Cost.
LRMC = Long-Run Marginal Cost.

Table 33. BANDS OF SUGGESTED PRICES BY SEASON: Commonwealth Edison Co., 1972

Rate Schedule by Season (1)	Lower Bound "SRMC" $/KWH (2)	Generation $/KWH (3)	Transmission $/KWH (4)	Distribution $/KWH (5)	Upper Bound (6)=(2)+(3)+(4)+(5) "LRMC" $/KWH (6)	Present Av. Annual Price $/KWH (7)
Small Residential:						
June-September	.0046	.0182	.0469	.0933	.0630	
October-January	.0046	.0182	.0469	.0933	.0630	.0353
February-May	.0046	.0182	.0469	.0933	.0630	
Large Residential:						
June-September	.0046	.0182	.0117	.0233	.0578	
October-January	.0046	.0182	.0117	.0233	.0578	.0302
February-May	.0046	.0182	.0117	.0233	.0578	
Residential Space Heating:						
June-September	.0046	.0182	.0114	.0028	.0370	
October-January	.0046	.0182	.0114	.0028	.0370	.0170
February-May	.0046	.0182	.0114	.0028	.0370	
Small Commercial & Industrial:						
June-September	.0046	.0182	.0017	.0035	.0280	
October-January	.0046	.0182	.0017	.0035	.0280	.0249
February-May	.0046	.0182	.0017	.0035	.0280	
Large Commercial & Industrial:						
June-September	.0046	.0182	--	--	.0228	
October-January	.0046	.0182	--	--	.0228	.0132
February-May	.0046	.0182	--	--	.0228	

Table 33 (continued). BANDS OF SUGGESTED PRICES BY SEASON: Commonwealth Edison Co., 1972

Rate Schedule by Season (1)	Lower Bound "SRMC" $/KWH (2)	Generation $/KWH (3)	Transmission $/KWH (4)	Distribution $/KWH (5)	Upper Bound (6)=(2)+(3)+(4)+(5) "LRMC" $/KWH (6)	Present Av. Annual Price $/KWH (7)
Street Light & Signal System:						
June-September	.0046	--	--	.0435	.0481	
October-January	.0046	--	--	.0435	.0481	.0209
February-May	.0046	--	--	.0435	.0481	
Water & Sewer Pumping:						
June-September	.0046	.0182	.0001	.0002	.0231	
October-January	.0046	.0182	.0001	.0002	.0231	.0135
February-May	.0046	.0182	.0001	.0002	.0231	
Railroads & Railways:						
June-September	.0046	.0182	.0094	--	.0322	
October-January	.0046	.0182	.0094	--	.0322	.0160
February-May	.0046	.0182	.0094	--	.0322	
Resale, Municipalities:						
June-September	.0046	.0182	.0067	--	.0295	
October-January	.0046	.0182	.0067	--	.0295	.0112
February-May	.0046	.0182	.0067	--	.0295	

Table 34. BANDS OF SUGGESTED PRICES BY SEASON: Duke Power Company, 1972

Rate Schedule by Season (1)	Lower Bound "SRMC" $/KWH (2)	Generation $/KWH (3)	Transmission $/KWH (4)	Distribution $/KWH (5)	Upper Bound (6)=(2)+(3)+(4)+(5) "LRMC" $/KWH (6)	Present Av. Annual Price $/KWH (7)
Residential (R)						
July-October	.0044	.0091	.0174	.0341	.0650	
Nov.-February	.0044	.0091	.0169	.0332	.0635	.0265
March-June	.0044	.0094	.0174	.0341	.0653	
Residential (RA):						
July-October	.0044	.0091	.0046	.0181		
Nov.-February	.0044	.0090	.0045	.0087	.0266	.0167
March-June	.0044	.0094	.0046	.0090	.0272	
Residential (RW):						
July-October	.0044	.0091	.0093	.0181	.0409	
Nov.-February	.0044	.0090	.0090	.0177	.0401	.0201
March-June	.0044	.0094	.0093	.0182	.0413	
Residential (WGS & MISC.):						
July-October	.0044	.0091	.0059	.0115	.0309	
Nov.-February	.0044	.0090	.0058	.0112	.0304	.0155
March-June	.0044	.0094	.0059	.0116	.0313	
Commercial & Industrial (G):						
July-October	.0044	.0091	.0024	.0046	.0205	
Nov.-February	.0044	.0090	.0023	.0045	.0202	.0168
March-June	.0044	.0094	.0024	.0046	.0208	
Commercial & Industrial (GA):						
July-October	.0044	.0091	.0003	.0005	.0143	
Nov.-February	.0044	.0090	.0003	.0005	.0142	.0112
March-June	.0044	.0094	.0003	.0005	.0146	

Table 34 (continued). BANDS OF SUGGESTED PRICES BY SEASON: Duke Power Company, 1974

Rate Schedule by Season (1)	Lower Bound "SRMC" $/KWH (2)	Generation $/KWH (3)	Transmission $/KWH (4)	Distribution $/KWH (5)	Upper Bound (6)=(2)+(3)+(4)+(5) "LRMC" $/KWH (6)	Present Av. Annual Price $/KWH (7)
Commercial & Industrial (I)						
July-October	.0044	.0091	.0001	.0001	.0137	
Nov.-February	.0044	.0090	.0001	.0001	.0136	.0089
March-June	.0044	.0094	.0001	.0001	.0140	
Commercial & Industrial (IP-IS):						
July-October	.0044	.0091	--	--	.0135	
Nov.-February	.0044	.0090	--	--	.0134	.0079
March-June	.0044	.0094	--	--	.0138	
Commercial & Industrial (All Other):						
July-October	.0044	.0091	.0092	.0183	.0410	
Nov.-February	.0044	.0090	.0092	.0183	.0409	.0278
March-June	.0044	.0094	.0092	.0183	.0413	
Street Lighting & Signal System:						
July-October	.0044	.0091	--	--	.0135	
Nov.-February	.0044	.0090	--	--	.0134	.0322
March-June	.0044	.0094	--	--	.0138	
Other Public Authorities:						
July-October	.0044	.0091	.0002	.0004	.0141	
Nov.-February	.0044	.0090	.0002	.0004	.0140	.0105
March-June	.0044	.0094	.0002	.0004	.0144	

Table 34 (continued). BANDS OF SUGGESTED PRICES BY SEASON: Duke Power Company, 1974

Rate Schedule by Season (1)	Lower Bound "SRMC" $/KWH (2)	Generation $/KWH (3)	Transmission $/KWH (4)	Distribution $/KWH (5)	Upper Bound (6)=(2)+(3)+(4)+(5) "LRMC" $/KWH (6)	Present Av. Annual Price $/KWH (7)
Sales for Resale:						
July-October	.0044	.0091	.0061	--	.0196	
Nov.-February	.0044	.0090	.0061	--	.0195	.0089
March-June	.0044	.0094	.0061	--	.0199	
Interdepartmental:						
July-October	.0044	.0091	--	--	.0135	
Nov.-February	.0044	.0090	--	--	.0134	.0144
March-June	.0044	.0094	--	--	.0138	

Table 35. BANDS OF SUGGESTED PRICES BY SEASON:
New York State Electric and Gas Corp., 1972

Rate Schedule by Season (1)	Lower Bound "SRMC" $/KWH (2)	Generation $/KWH (3)	Transmission $/KWH (4)	Distribution $/KWH (5)	Upper Bound (6)=(2)+(3)+(4)+(5) "LRMC" $/KWH (6)	Present Av. Annual Price $/KWH (7)
Residential:						
Nov.-February	.0047	.0128	.0148	.0336	.0659	
March-June	.0047	.0131	.0146	.0331	.0655	.0272
July-October	.0047	.0130	.0147	.0331	.0655	
General Service (SC2 PSC 113):						
Nov.-February	.0047	.0128	.0049	.0109	.0333	
March-June	.0047	.0131	.0048	.0107	.0333	.0273
July-October	.0047	.0130	.0048	.0108	.0333	
General Service (SC2 PSC 108):						
Nov.-February	.0047	.0128	.0016	.0035	.0227	
March-June	.0047	.0131	.0016	.0035	.0229	.0175
July-October	.0047	.0130	.0016	.0036	.0229	
Large Light & Power (SC3 PSC 113):						
Nov.-February	.0047	.0128	.0001	.0002	.0178	
March-June	.0047	.0131	.0001	.0002	.0181	.0138
July-October	.0047	.0130	.0001	.0002	.0180	
Primary Light & Power (SC3 PSC 108)						
Nov.-February	.0047	.0128	--	.0001	.0176	
March-June	.0047	.0131	--	.0001	.0179	.0103
July-October	.0047	.0130	--	.0001	.0178	

Table 35 (continued). BANDS OF SUGGESTED PRICES BY SEASON: New York State Electric and Gas Corp., 1972

Rate Schedule by Season (1)	Lower Bound "SRMC" $/KWH (2)	Generation $/KWH (3)	Transmission $/KWH (4)	Distribution $/KWH (5)	Upper Bound (6)=(2)+(3)+(4)+(5) "LRMC" $/KWH (6)	Present Av. Annual Price $/KWH (7)
Other Public Authority:						
Nov.-February	.0047	.0128	.0013	.0031	.0219	
March-June	.0047	.0131	.0013	.0031	.0222	.0169
July-October	.0047	.0130	.0013	.0031	.0221	
Street Lighting & Signal Systems:						
Nov.-February	.0047	.0128	--	--	.0175	
March-June	.0047	.0131	--	--	.0178	.0486
July-October	.0047	.0130	--	--	.0177	
Interchange & Resale:						
Nov.-February	.0047	.0128	.0115	--	.0290	
March-June	.0047	.0131	.0115	--	.0293	.0080
July-October	.0047	.0130	.0115	--	.0292	

Table 36. BANDS OF SUGGESTED PRICES BY SEASON: Pennsylvania Power & Light, 1972

Rate Schedule by Season (1)	Lower Bound "SRMC" $/KWH (2)	Generation $/KWH (3)	Transmission $/KWH (4)	Distribution $/KWH (5)	Upper Bound (6)=(2)+(3)+(4)+(5) "LRMC" $/KWH (6)	Present Av. Annual Price $/KWH (7)
Residential (RS):						
Nov.-February	.0047	.0150	.0115	.0413	.0741	
March-June	.0047	.0156	.0119	.0428	.0762	.0271
July-October	.0047	.0139	.0115	.0323	.0624	
Residential (RH):						
Nov.-February	.0047	.0150	.0024	.0085	.0318	
March-June	.0047	.0156	.0025	.0088	.0328	.0171
July-October	.0047	.0139	.0019	.0067	.0272	
Residential (SGS, AL, & CS):						
Nov.-February	.0047	.0150	.0015	.0053	.0277	
March-June	.0047	.0156	.0015	.0055	.0285	.0673
July-October	.0047	.0139	.0011	.0041	.0238	
Commercial & Industrial (SGS):						
Nov.-February	.0047	.0150	.0084	.0304	.0597	
March-June	.0047	.0156	.0087	.0315	.0617	.0426
July-October	.0047	.0139	.0066	.0237	.0489	
Commercial & Industrial (LP3):						
Nov.-February	.0047	.0150	.0002	.0008	.0219	
March-June	.0047	.0156	.0003	.0009	.0227	.0231
July-October	.0047	.0139	.0002	.0007	.0195	

Table 36 (continued). BANDS OF SUGGESTED PRICES BY SEASON: Pennsylvania Power & Light, 1972

Rate Schedule by Season (1)	Lower Bound "SRMC" \$/KWH (2)	Generation \$/KWH (3)	Transmission \$/KWH (4)	Distribution \$/KWH (5)	Upper Bound (6)=(2)+(3)+(4)+(5) "LRMC" \$/KWH (6)	Present Av. Annual Price \$/KWH (7)
Commercial & Industrial (LP4):						
Nov.-February	.0047	.0150	--	.0001	.0210	
March-June	.0047	.0156	--	.0001	.0216	.0153
July-October	.0047	.0139	--	.0001	.0187	
Commercial & Industrial (LP5):						
Nov.-February	.0047	.0150	--	.0002	.0211	
March-June	.0047	.0156	--	.0002	.0217	.0128
July-October	.0047	.0139	--	.0002	.0188	
Commercial & Industrial (LP6):						
Nov.-February	.0047	.0150	--	--	.0209	
March-June	.0047	.0156	--	--	.0215	.0096
July-October	.0047	.0139	--	--	.0186	
Commercial & Industrial (LP):						
Nov.-February	.0047	.0150	.0002	.0008	.0219	
March-June	.0047	.0156	.0002	.0008	.0225	.0128
July-October	.0047	.0139	.0002	.0008	.0196	
Commercial & Industrial (HS)						
Nov.-February	.0047	.0150	.0003	.0010	.0222	
March-June	.0047	.0156	.0003	.0010	.0228	.0166
July-October	.0047	.0139	.0003	.0010	.0199	

Table 36 (continued). BANDS OF SUGGESTED PRICES BY SEASON: Pennsylvania Power & Light, 1972

Rate Schedule by Season (1)	Lower Bound "SRMC" $/KWH (2)	Generation $/KWH (3)	Transmission $/KWH (4)	Distribution $/KWH (5)	Upper Bound (6)=(2)+(3)+(4)+(5) "LRMC" $/KWH (6)	Present Av. Annual Price $/KWH (7)
Commercial & Industrial (BST):						
Nov.-February	.0047	.0150	--	--	.0209	
March-June	.0047	.0156	--	--	.0215	.0092
July-October	.0047	.0139	--	--	.0186	
Commercial & Industrial (All Other):						
Nov.-February	.0047	.0150	.0027	.0096	.0332	
March-June	.0047	.0156	.0027	.0096	.0338	.0243
July-October	.0047	.0139	.0027	.0096	.0309	
Street Lighting and Signal System:						
Nov.-February	.0047	.0150	--	.0036	.0245	
March-June	.0047	.0156	--	.0036	.0251	.0691
July-October	.0047	.0139	--	.0036	.0222	
Other Public Authorities:						
Nov.-February	.0047	.0150	--	--	.0209	
March-June	.0047	.0156	--	--	.0215	.0223
July-October	.0047	.0139	--	--	.0186	
Railroads & Railways:						
Nov.-February	.0047	.0150	--	--	.0209	
March-June	.0047	.0156	--	--	.0215	.0111
July-October	.0047	.0139	--	--	.0186	

Table 36 (continued). BANDS OF SUGGESTED PRICES BY SEASON: Pennsylvania Power & Light, 1972

Rate Schedule by Season (1)	Lower Bound "SRMC" $/KWH (2)	Generation $/KWH (3)	Transmission $/KWH (4)	Distribution $/KWH (5)	Upper Bound (6)=(2)+(3)+(4)+(5) "LRMC" $/KWH (6)	Present Av. Annual Price $/KWH (7)
Interdepartmental:						
Nov.-February	.0047	.0150	--	--	.0209	
March-June	.0047	.0156	--	--	.0215	.0175
July-October	.0047	.0139	--	--	.0186	
Interchange & Resale:						
Nov.-February	.0047	.0150	.0062	--	.0271	
March-June	.0047	.0156	.0062	--	.0277	.0110
July-October	.0047	.0139	.0062	--	.0248	

external cost. In what follows we will therefore take ΔW alone, or some measure of ΔW_p alone, as a conservative estimate of potential pricing improvement.

There is inevitably some element of judgement in the selection of a procedure for making those conservative estimates. Peak costs are much higher than average prices, and our econometric evidence on demand elasticities is based upon a relatively much smaller variation around average prices. It therefore would be improper to compute estimates of ΔW_p based upon our full upper bounds--columns 6 of Tables 32 through 36--where those upper bounds are many times higher than present average prices.

In Tables 37 through 41 we have computed two appropriate indicators of potential pricing improvement. First, we have calculated the welfare gain ΔW_{10} associated with a 10% decrease in peak consumption. This requires that we calculate the peak price increase ΔP_{10} over present average price P_{av} necessary to cut peak consumption by 10%, and then that we compute the corresponding welfare gain. In columns 8 of Tables 37 through 41, these welfare gain estimates are presented by system, by season, and by rate schedule. Second, we have computed an estimate of ΔW_p based upon the full upper bound estimates of peak correct peak prices--columns 6 of Tables 32 through 36. As indicated in columns 9 of Tables 37 through 41, we have used that full upper bound directly when it implies less than a doubling of peak price. When use of the full upper bound would imply more than a doubling of present average price, we have taken half the upper bound as the revised peak price. In this way we have computed, for each system, season and rate schedule, a second estimate ΔW_{pk} of ΔW_p. Columns 11 of Tables 37 through 41 summarize the results of this second calculation.

Table 37. PEAK BENEFITS BY SEASON: AVERAGE PRICES COMPARED WITH PEAK PRICES WHICH DECREASE PEAK KWH TEN PERCENT AND WITH LRMC

Potomac Electric Power Company, 1972

Rate Schedule by Season	Long Run Average Price Elasticity $/\varepsilon_{av}/$	Present Average Price, P_{av} $/KWH	Price Change Consis. with a 10 % Decrease in Peak KWH, ΔP_{10} $/KWH	LRMC if $\frac{1}{2}$xLRMC<P_{av}, $\frac{1}{2}$xLRMC Otherwise $/KWH	Peak KWH in Season, KWH_{pk} 10^3KWH	Efficiency Gains Associated With a Ten Percent Decrease In Peak KWH: Fractional Price Change $\frac{\Delta P_{10}}{P_{av}} = \frac{1}{\varepsilon_{av}} x.1$	Efficiency Gains Associated With a Ten Percent Decrease In Peak KWH: Efficiency Gains $\Delta W_{10} = \frac{1}{2}\varepsilon_{av}\Delta P_{10}KWH_{pk}\frac{\Delta P_{10}}{P_{av}}$	Efficiency Gain Associated with Upper Bound or One-Half Upper Bound: Price Change at Peak, ΔP_{pk} = LRMC-P_{av} if $\frac{1}{2}$LRMC<P_{av}, = $\frac{1}{2}$LRMC-P_{av} Otherwise	Average Fractional Price Change	Efficiency Gains $\Delta W_{pk} = \frac{1}{2}\varepsilon_{av}\Delta P_{pk}KWH_{PK}\frac{\Delta P_{pk}}{P_{av}}$	Change in Peak KWH ΔKWH_{pk} 10^3KWH	Percentage Change in Peak KWH
	1	2	3	4	5	6	7	8	9	10	11	12
Residential												
June-September	1.22	.0248	.0020	.0398	647,588	.0820	64,784	.0150	.464	2,749,400	- 366,534	- 56.6
October-February	1.22	.0248	.0020	.0406	365,872	.0820	36,601	.0158	.483	1,705,191	- 215,499	- 58.9
February-May	1.22	.0248	.0020	.0372	362,110	.0820	36,225	.0124	.400	1,095,600	- 176,710	- 48.8
Commercial												
June-September	1.46	.0219	.0015	.0216[a]	1,268,353	.0684	94,997	.0003	.014	3,888	+ 25,367	+ 2.0
October-February	1.46	.0219	.0015	.0250[a]	716,594	.0684	53,671	.0031	.132	214,058	- 138,303	- 19.3
February-May	1.46	.0219	.0015	.0235[a]	709,222	.0684	53,119	.0016	.070	57,985	- 72,341	- 10.2
Industrial												
June-September	1.93	.0143	.0007	.0178[a]	279,009	.0518	9,763	.0035	.218	205,432	- 117,463	- 42.1
October-February	1.93	.0143	.0007	.0212[a]	279,009	.0518	9,763	.0069	.389	722,676	- 209,536	- 75.1
February-May	1.93	.0143	.0007	.0201[a]	279,009	.0518	9,763	.0058	.337	526,264	- 181,356	- 65.0
Interchange and Resale												
June-September	1.93	.0097	--	.0157	211,002	.0518	--	.0060	.472	576,643	- 192,222	- 91.1
October-February	1.93	.0097	--	.0175	211,002	.0518	--	.0078	.574	911,634	- 233,790	-110.8
February-May	1.93	.0097	--	.0169	211,002	.0518	--	.0072	.541	793,129	- 220,313	-104.4
					Σ5,539,772		Σ 368,686			Σ9,592,900	Σ-2,128,700	- 38.4

[a] *Full upper bound*

Table 38. PEAK BENEFITS BY SEASON: AVERAGE PRICES COMPARED WITH PEAK PRICES WHICH DECREASE PEAK KWH TEN PERCENT AND WITH LRMC

Commonwealth Edison Company, 1972

Rate Schedule by Season	Long Run Average Price Elasticity $/\epsilon_{av}/$	Present Average Price, P_{av} $/KWH	Price Change Consis. with a 10 % Decrease in Peak KWH, ΔP_{10} $/KWH	LRMC if $\frac{1}{2}$xLRMC<P_{av}, $\frac{1}{2}$xLRMC Otherwise $/KWH	Peak KWH in Season, KWH_{pk} 10^3KWH	Efficiency Gains Associated With a Ten Percent Decrease In Peak KWH: Fractional Price Change $\frac{\Delta P_{10}}{P_{av}} = \frac{1}{\epsilon_{av}}$ x.1	Efficiency Gains $\Delta W_{10} = \frac{1}{2}\epsilon_{av}\Delta P_{10}KWH_{pk}\frac{\Delta P_{10}}{P_{av}}$	Efficiency Gain Associated with Upper Bound or One-Half Upper Bound: Price Change at Peak, ΔP_{pk} = LRMC-P_{av} if $\frac{1}{2}$LRMC<P_{av}, = $\frac{1}{2}$LRMC-P_{av} Otherwise	Average Fractional Price Change	Efficiency Gains $\Delta W_{pk} = \frac{1}{2}\epsilon_{av}\Delta P_{pk}KWH_{pk}\frac{\Delta P_{pk}}{P_{av}}$	Change in Peak KWH ΔKWH_{pk} 10^3KWH	Percentage Change in Peak KWH
	1	2	3	4	5	6	7	8	9	10	11	12
Small Residential												
June-September	1.22	.0353	.0029	.0630[a]	373,413	.082	54,166	.0277	.564	3,558,591	- 256,908	- 68.8
October-January	1.22	.0353	.0029	.0630[a]	364,534	.082	53,603	.0277	.564	3,473,975	- 250,799	- 68.8
February-May	1.22	.0353	.0029	.0630[a]	337,766	.082	48,986	.0277	.564	3,218,879	- 232,383	- 66.8
Large Residential												
June-September	1.22	.0302	.0025	.0578[a]	2,009,946	.082	251,344	.0276	.627	21,217,272	- 1,529,569	- 76.1
October-January	1.22	.0302	.0025	.0578[a]	1,926,150	.082	240,865	.0276	.627	20,332,770	- 1,465,800	- 76.1
February-May	1.22	.0302	.0025	.0578[a]	1,818,067	.082	227,349	.0276	.627	19,191,828	- 1,383,549	- 76.1
Residential Space Heating												
June-September	1.22	.0170	.0014	.0185	96,632	.082	6,767	.0015	.084	7,427	- 9,856	- 10.2
October-January	1.22	.0170	.0014	.0185	94,332	.082	6,606	.0015	.084	7,250	- 9,622	- 10.2
February-May	1.22	.0170	.0014	.0185	87,407	.082	6,142	.0015	.084	6,257	- 8,304	- 10.2
Small Commercial and Industrial												
June-September	1.48	.0249	.0017	.0280[a]	2,276,368	.068	194,730	.0031	.117	610,972	- 393,812	- 17.3
October-January	1.48	.0249	.0017	.0280[a]	2,222,243	.068	190,100	.0031	.117	596,446	- 384,448	- 17.3
February-May	1.48	.0249	.0017	.0280[a]	2,059,061	.068	176,140	.0031	.117	552,648	- 356,218	- 17.3
Large Commercial and Industrial												
June-September	1.87	.0132	.0007	.0228[a]	1,990,064	.053	69,032	.0096	.533	9,520,880	- 1,984,093	- 99.7
October-January	1.87	.0132	.0007	.0228[a]	1,943,283	.053	67,410	.0096	.533	9,297,070	- 1,937,453	- 99.7
February-May	1.87	.0132	.0007	.0228[a]	1,800,586	.053	62,460	.0096	.533	8,614,378	- 1,795,184	- 99.7
Water and Sewer Pumping												
June-September	1.87	.0231	.0012	.0240	44,175	.053	2,627	.0009	.038	1,413	- 3,136	- 7.1
October-January	1.87	.0231	.0012	.0240	43,124	.053	2,564	.0009	.038	1,379	- 3,062	- 7.1
February-May	1.87	.0231	.0012	.0240	39,958	.053	2,376	.0009	.038	1,278	- 2,837	- 7.1
Railroads and Railways												
June-September	1.87	.0160	.0008	.0161	37,272	.053	1,478	.0001	.006	21	- 410	- 1.1
October-January	1.87	.0160	.0008	.0161	36,386	.053	1,442	.0001	.006	20	- 400	- 1.1
February-May	1.87	.0160	.0008	.0161	33,714	.053	1,337	.0001	.006	19	- 371	- 1.1
Resale, Municipalities												
June-September	1.87	.0112	.0006	.0147	72,474	.053	2,154	.0035	.270	64,036	- 36,599	- 50.5
October-January	1.87	.0112	.0006	.0147	70,051	.053	2,083	.0035	.270	88,421	- 35,376	- 50.5
February-May	1.87	.0112	.0006	.0147	65,555	.053	1,949	.0035	.270	82,746	- 33,105	- 50.5
					Σ19,836,555					Σ100,445,946	Σ-12,113,294	- 61.1

[a] *Full upper bound*